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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WON, MICHAEL YOUNG	
ART UNIT	**PAPER NUMBER**
2155	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/824,099	KUMAR, AJAY	
	Examiner	Art Unit	
	Michael Y. Won	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) *20-23 and 30-33* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19 and 24-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/10/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the application filed April 14, 2004.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-19 and 24-29 are drawn to Analysis (... of state), classified in class 714, subclass 37.

   II. Claims 20-23 and 30-33 are drawn to Computer Network Monitoring, classified in class 709, subclass 224.

3. Inventions of Group I and Group II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination of Group I has separate utility such as monitoring application states whereas, the subcombination of Group II has separate utility such as detecting failed devices within the network. See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR

1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

4. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art due to their recognized divergent subject matter and because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Robert C. Kowert (Reg. No. 39,255) on November 7, 2007 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-19 and 24-29. Applicant in replying to this Office action must make affirmation of this election. Claims 20-23 and 30-33 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Claims 1-19 and 24-29 have been examined and are pending with this action.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 24-29 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The language of claim 24 raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

The applicant(s) claim "carrier medium" but does not define within the body of the claim the hardware in which the invention runs. Thus, absent recitation of the server or some other hardware, claim 24 is not limited to a tangible embodiment, instead being sufficiently broad to encompass software, per se.

In paragraph [0051], of the specification, the applicant(s) have provided evidence that the applicant intends the medium to include signals as such that the claim is drawn to a form of energy (carrier wave or other propagation medium). Energy is not one of the four categories of invention and therefore this claim is not statutory. Energy is not a series of steps or acts and thus not a process. Energy is not a physical article or object and as such is not a machine or manufacture. Energy is not combination of substances and therefore not a composition of matter.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

8. Claims 1, 9 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 9 and 14 recites the limitation "the persistence manager". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-19 and 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jacobs et al. (US 6,385,643) in view of Chkodrov et al. (US 7,107,340).

INDEPENDENT:

As per **claim 1**, Jacobs teaches a system, comprising:

a server cluster, comprising:

a plurality of server nodes (see Fig.5b), wherein each server node comprises:

a server container (see col.7, lines 38-39: "EJB 358 is a container for a variety of Java™ applications");

one or more applications configured to execute within the server container (see col.2, lines 26-32: "An instance of EJB 100b is a software component or a reusable pre-built piece encapsulated application code that can be combined with other components"); and

a Java Data Object (JDO) persistence manager (see col.7, lines 31-39 and col.8, lines 55-64) configured to detect changes to application state data and to persist the application state data (see col.16, lines 52-58: "and maintain internal state between calls"); and

a persistent data store coupled to the cluster, configured to store application state data of the one or more applications (see col.15, lines 53-56: "load application state into memory on an as-needed basis").

Jacobs does not explicitly teach wherein in response to a change in application state data, the persistence manager is configured to persist only changed application state data to the persistent data store.

Chkodrov teaches wherein in response to a change in application state data, the persistence manager is configured to persist only changed application state data to the persistent data store (see col.1, lines 45-47 and col.6, lines 7-9: "modified state data is transmitted back to database 330b for storage thereat").

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system of Jacobs in view of Chkodrov so that in response to a change in application state data, the persistence manager is configured to persist only changed application state data to the persistent data store. One would be motivated to do so because one of ordinary skill in the art would agree such operation saves processing time and memory by persisting only required data and not redundant data.

As per **claim 9**, Jacobs teaches a system comprising:

an application server (see Fig.3a), comprising:

an application server container (see col.7, lines 38-39: "EJB 358 is a container for a variety of Java™ applications");

one or more applications configured to execute within the application server container (see col.2, lines 26-32: "An instance of EJB 100b is a software component or a reusable pre-built piece encapsulated application code that can be combined with other components"); and

a Java Data Object (JDO) persistence manager (see col.7, lines 31-39 and col.8, lines 55-64) configured to detect changes to application state data and to persist the application state data (see col.16, lines 52-58: "and maintain internal state between calls"); and

a persistent data store coupled to the application server, configured to store application state data of the one or more applications (see col.15, lines 53-56: "load application state into memory on an as-needed basis").

Jacobs does not explicitly teach wherein in response to a change in application state data, the persistence manager is configured to persist only changed application state data to the persistent data store.

Chkodrov teaches wherein in response to a change in application state data, the persistence manager is configured to persist only changed application state data to the persistent data store (see col.1, lines 45-47 and col.6, lines 7-9: "modified state data is transmitted back to database 330b for storage thereat").

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system of Jacobs in view of Chkodrov so that in response to a change in application state data, the persistence manager is configured to persist only changed application state data to the persistent data store. One would be motivated to do so because one of ordinary skill in the art would agree such operation saves processing time and memory by persisting only required data and not redundant data.

As per **claim 14**, Jacobs teaches a method, comprising:

a Java Data Object (JDO) persistence manager see col.7, lines 31-39 and col.8, lines 55-64) detecting an access to application state data (see col.16, lines 52-58: "and maintain internal state between calls"); and

the persistence manager determining whether the access alters the application state, in response to said detecting (see col.16, lines 52-58: "stateful objects identified").

Jacobs does not explicitly teach persisting only the elements of the application state that are changed by the access to a persistent store, if the access alters the application state.

Chkodrov teaches persisting only the elements of the application state that are changed by the access to a persistent store, if the access alters the application state (see col.1, lines 45-47 and col.6, lines 7-9: "modified state data is transmitted back to database 330b for storage thereat").

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system of Jacobs in view of Chkodrov by implementing persisting only the elements of the application state that are changed by the access to a persistent store, if the access alters the application state. One would be motivated to do so because one of ordinary skill in the art would agree such operation saves processing time and memory by persisting only required data and not redundant data.

As per **claim 24**, Jacobs teaches a computer-accessible carrier medium comprising program instructions, wherein the program instructions are computer-executable to implement a Java Data Object (JDO) persistence manager configured to:

detect an access to application state data (see col.16, lines 52-58: "and maintain internal state between calls"); and

in response to said detecting, determine whether the access alters the application state (see col.16, lines 52-58: "stateful objects identified").

Jacobs does not explicitly teach if the access alters the application state, persist only the elements of the application state that are changed by the access to a persistent store.

Chkodrov teaches if the access alters the application state, persist only the elements of the application state that are changed by the access to a persistent store (see col.1, lines 45-47 and col.6, lines 7-9: "modified state data is transmitted back to database 330b for storage thereat").

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system of Jacobs in view of Chkodrov so that if the access alters the application state, persisting only the elements of the application state that are changed by the access to a persistent store. One would be motivated to do so because one of ordinary skill in the art would agree such operation saves processing time and memory by persisting only required data and not redundant data.

DEPENDENT:

As per **claims 2, 10, 15 and 25**, which respectively depends on claims 1, 9, 14 and 24, Jacobs does not explicitly teach wherein the persistence manager is configured to persist only mutated application state data to the data store, only in response to mutation of the application state data.

Chkodrov teaches persisting only mutated application state data to the data store, only in response to mutation of the application state data (see col.1, lines 45-47 and col.6, lines 7-9: "modified state data is transmitted back to database 330b for storage thereat").

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system of Jacobs in view of Chkodrov by implementing persisting only mutated application state data to the data store, only in response to mutation of the application state data. One would be motivated to do so because one of ordinary skill in the art would agree such operation saves processing time and memory by persisting only required data and not redundant data.

As per **claims 3, 11, 16 and 26**, which respectively depends on claims 1, 9, 14 and 24, Jacobs further teaches wherein the application state data comprises hypertext transfer protocol (http) session data (see col.8, lines 45-51).

As per **claims 4, 12, 17 and 27**, which respectively depends on claims 1, 9, 14 and 24, Jacobs further teaches wherein the application state data comprises a session bean (see col.16, lines 52-58).

As per **claims 5, 13, 18 and 28**, which respectively depends on claims 1, 9, 14 and 24, Jacobs teaches further comprising a JDO-style write barrier configured to detect mutation of the application state data (see col.9, lines 49-62 and col.16, lines 52-58).

As per **claims 6, 19 and 29**, which respectively depends on claims 1, 14 and 24, Jacobs further teaches wherein one or more of the applications is configured to function

as a distributed application (see col.3, line 66-col.4, line 1) across two or more of the server nodes (see Fig.5b).

As per **claim 7**, which respectively depends on claim 1, Jacobs further teaches wherein the plurality of server nodes is configured to detect the failure of a cluster node (see col.9, lines 49-62) and recover sessions from a failed node by accessing session state data from the persistent data store (see col.15, lines 53-56).

As per **claim 8**, which respectively depends on claim 1, Jacobs teaches further comprising a non-sticky load balancer configured to distribute session requests to server nodes based on server workload (see col.11, lines 17-28), wherein the persistence mechanism is configured to synchronize session data to the persistent store (see col.2, lines 49-51 and col.15, lines 53-56).

Conclusion

10. For the reasons above, claims 1-19 and 24-29 have been rejected and remain pending.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Y. Won whose telephone number is 571-272-3993. The examiner can normally be reached on M-Th: 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Won/

Primary Examiner

November 7, 2007